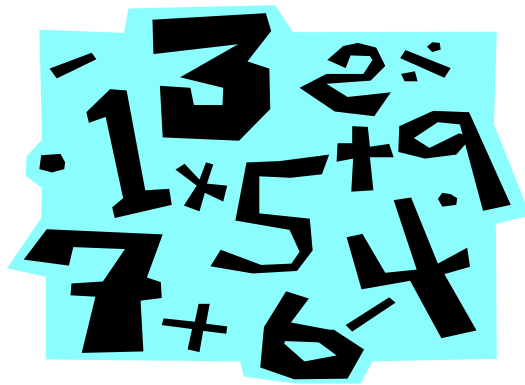


# FIFTH GRADE

## Number and Number Sense





## Fishing for Decimals/Fractions

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**Format:** Small groups, partners

**SOL Objectives:**

5.2 The student will

- a) recognize and name commonly used fractions (halves, fourths, fifths, eighths, and tenths) in their equivalent decimal form and vice versa;

**Related SOL:** 4.2b,c

**Vocabulary:** *equivalent, fractions, decimals, tenth, hundredth, thousandth*

**Materials:** Fraction and decimal game cards; pencil and paper

**Time Required:** 30 minutes

**Directions:**

The game is played like the “Go Fish” card game.

1. Each player is dealt five cards. The remaining cards are placed in the middle of the playing area to be used as the “fishing” pile.
2. At each turn, the player asks another player for a card he or she needs to make a pair. If the other player has the card, he or she must give it to the player who asked for it. The player then lays down the matched pair. If the other player does not have the desired card, then the first player must “go fish” by drawing another card from the pile.
3. The first player to match all of his or her cards, and thus have no cards remaining in hand, is the winner.

**Game Cards**

<b><math>\frac{1}{2}</math></b>	<b>0.50</b>	<b><math>\frac{1}{5}</math></b>	<b>0.20</b>	<b><math>\frac{1}{4}</math></b>
<b><math>\frac{5}{6}</math></b>	<b>0.83</b>	<b><math>\frac{3}{5}</math></b>	<b>0.60</b>	<b><math>\frac{3}{4}</math></b>
<b><math>\frac{3}{8}</math></b>	<b>0.375</b>	<b><math>\frac{3}{10}</math></b>	<b>0.30</b>	<b><math>\frac{4}{5}</math></b>

<b>0.80</b>	<b><math>\frac{1}{8}</math></b>	<b>0.125</b>	<b><math>\frac{2}{5}</math></b>	<b>0.40</b>
<b><math>\frac{5}{8}</math></b>	<b>0.25</b>	<b><math>\frac{7}{8}</math></b>	<b>0.875</b>	<b><math>\frac{7}{10}</math></b>
<b>0.70</b>	<b><math>\frac{9}{10}</math></b>	<b>0.90</b>	<b>0.25</b>	<b>0.75</b>

# Line-Up

---

**Format:** Small groups, partners

**SOL Objectives:**

- 5.2 The student will  
 b) order a given set of fractions and decimals from least to greatest. Fractions will include like and unlike denominators limited to 12 or less, and mixed numbers.

**Related SOL:** 4.2b,c

**Vocabulary:** *least to greatest, decimal, fractions, denominators, numerators*

**Materials:** Paper and pencils; number cards containing fractions and decimals, sentence strips

**Directions:**

1. Give each group or pair of students a number line marked  $0 \frac{1}{2} 1$ . (Use a sentence strip for the number line.)

2. Suggested numbers for the number card sets:

$\frac{1}{2}$ , 0.91, 0.04, 0.89, 0.51,  $\frac{2}{8}$

$\frac{3}{10}$ , 0.37, 0.08, 0.65, 0.71,  $\frac{3}{5}$

$\frac{1}{5}$ , 0.81, 0.07, 0.43, 0.21,  $\frac{1}{4}$

$\frac{2}{5}$ ,  $\frac{7}{10}$ , 0.50, 0.03, 0.71, 0.42

0.73, 0.06, 0.25, 0.76,  $\frac{1}{2}$ ,  $\frac{3}{4}$

3. Give the group or pair a set of number cards that contain both fractions and decimals. Working together, the students must decide where each number fits on the given number line. The students will place the cards on the number line from least to greatest. Once all students have completed their number lines, students may move around the room checking each other's number lines.
4. Bring the students back into the pairs/groups and discuss why the numbers were placed on the number line at each point.

**Exploratory Questions:**

- Why were the numbers placed on the number line at each point?
- How did you know which was least and which was greater?

# Decimal Spokes

---

**Format:** Small groups, partners

**SOL Objectives:**

- 5.1 The student will
- a) read, write, and identify the place values of decimals through thousandths;
  - b) round decimal numbers to the nearest tenth or hundredth; and
  - c) compare the values of two decimals through thousandths, using the symbols  $>$ ,  $<$ , or  $=$ .

**Vocabulary:** *tenths, hundredths, thousandths, round, compare, greater than, less than, equal to*

**Materials:** Game board; die or spinner; game cards; game pieces

**Time Required:** 20 to 30 minutes

**Directions:**

1. Instruct students that the object of this activity is to move one's game piece across the game board spokes, through the center to another spoke, and back to the original starting point by reading, identifying, rounding, and comparing decimals correctly.
2. Each student in the pair or group of four will roll the die (or spin the spinner) once, to determine who will go first.
3. Instruct the first player to choose a card and read the number or answer the question aloud. If the other players agree that the answer is correct, the first player rolls (or spins the spinner) and moves that many spaces. If the player provided an incorrect answer, that player may not roll the die (or spin the spinner), and must stay in place.
4. Players may share a space with only one other team member. If a third player lands on the same space, that player must redo the roll or spin.
5. The first player back to his or her spoke wins the game.
6. Additional blank cards are included if you wish to make game cards.

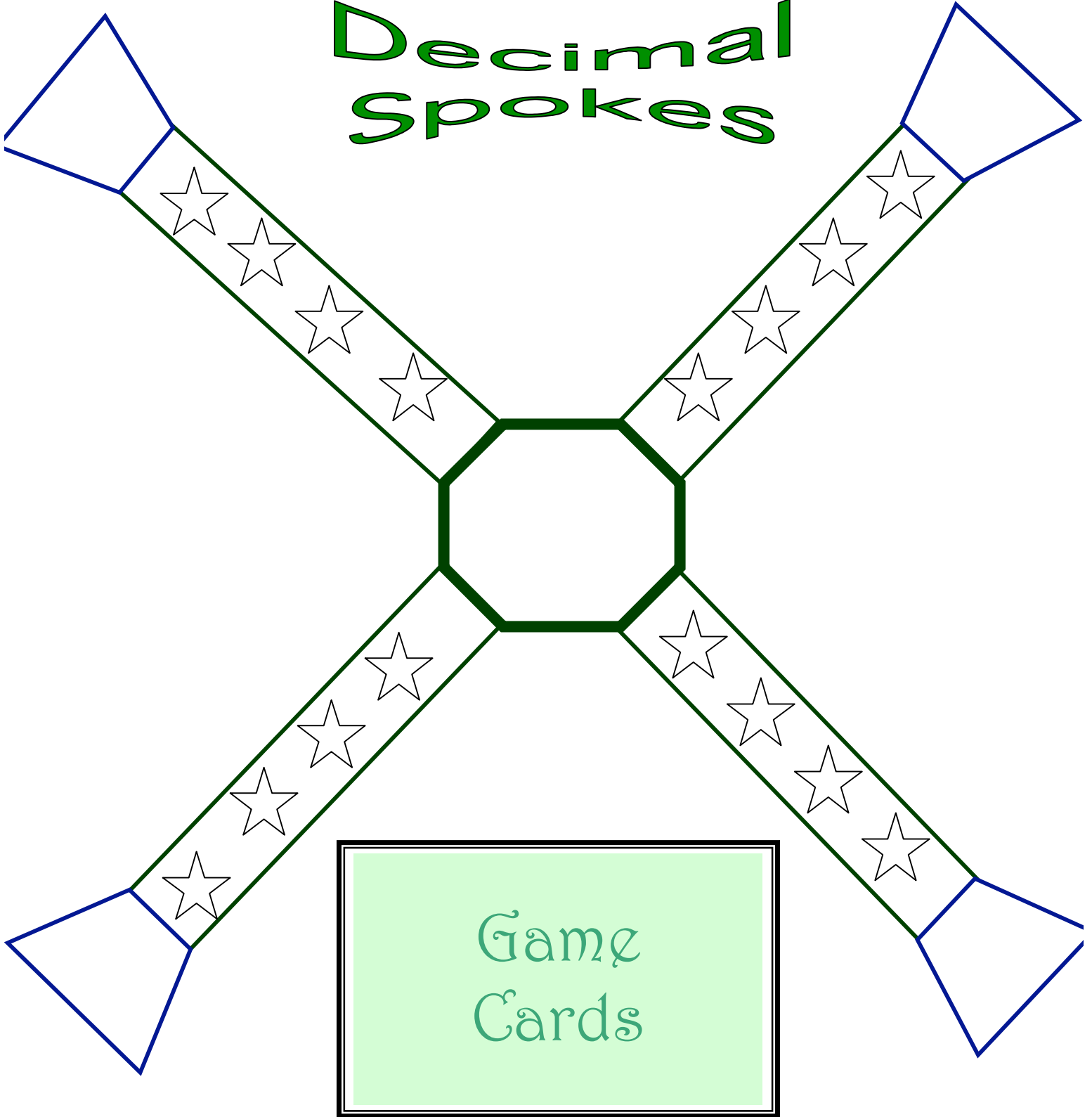
## Decimal Spokes Game Cards

<p>Read the following number:</p> <p><b>29.513</b></p>	<p>Read the following number:</p> <p><b>0.84</b></p>	<p>Read the following number:</p> <p><b>4.761</b></p>
<p>Read the following number:</p> <p><b>73.804</b></p>	<p>Read the following number:</p> <p><b>0.053</b></p>	<p>Read the following number:</p> <p><b>0.107</b></p>
<p>Round</p> <p><b>0.528</b></p> <p>to the nearest hundredth.</p>	<p>Round</p> <p><b>0.782</b></p> <p>to the nearest hundredth.</p>	<p>Round</p> <p><b>9.625</b></p> <p>to the nearest hundredth.</p>

<p>Round</p> <p><b>3.501</b></p> <p>to the nearest tenth.</p>	<p>Round</p> <p><b>21.94</b></p> <p>to the nearest tenth.</p>	<p>Round</p> <p><b>6.826</b></p> <p>to the nearest tenth.</p>
<p><b>&lt; &gt; =</b></p> <p>Which symbol completes the statement below:</p> <p><b>0.927 __ 0.792</b></p>	<p><b>&lt; &gt; =</b></p> <p>Which symbol completes the statement below:</p> <p><b>6.250 __ 6.205</b></p>	<p><b>&lt; &gt; =</b></p> <p>Which symbol completes the statement below:</p> <p><b>0.216 __ 0.27</b></p>
<p><b>&lt; &gt; =</b></p> <p>Which symbol completes the statement below:</p> <p><b>0.48 __ 0.395</b></p>	<p><b>&lt; &gt; =</b></p> <p>Which symbol completes the statement below:</p> <p><b>8.72 __ 8.702</b></p>	<p><b>&lt; &gt; =</b></p> <p>Which symbol completes the statement below:</p> <p><b>0.73 __ 0.730</b></p>

<p><b>&lt; &gt; =</b></p> <p>Which symbol completes the statement below:</p> <p><b>0.936 __ 0.937</b></p>	<p><b>&lt; &gt; =</b></p> <p>Which symbol completes the statement below:</p> <p><b>0.082 __ 0.82</b></p>	<p><b>&lt; &gt; =</b></p> <p>Which symbol completes the statement below:</p> <p><b>0.7 __ 0.16</b></p>
<p><b>&lt; &gt; =</b></p> <p>Which symbol completes the statement below:</p> <p><b>0.058 __ 0.581</b></p>	<p><b>&lt; &gt; =</b></p> <p>Which symbol completes the statement below:</p> <p><b>0.41 __ 0.9</b></p>	<p><b>&lt; &gt; =</b></p> <p>Which symbol completes the statement below:</p> <p><b>0.731 __ 0.713</b></p>

# Decimal Spokes



## Fraction/Decimal Combo

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**Format:** Small groups

**SOL Objectives:**

- 5.1 The student will
- read, write, and identify the place values of decimals through thousandths;
  - round decimal numbers to the nearest tenth or hundredth

**Related SOL:** 4.2b,c; 3.5; 3.6

**Vocabulary:** *equivalent, fraction, decimal*

**Materials:** 20 index cards for each group; pencils; paper; list of fractions

**Time Required:** 30 minutes

**Directions:**

- Give 20 index cards to each group of students.
- Provide students with a list of fractions and equivalent decimals.
- Have each group write one fraction per card on the first 10 cards.
- Next, have the groups write decimals, one per card, on the remaining 10 cards. The decimals must be equivalent to the fractions written on the first 10 cards (see example below).

Example:

$\frac{1}{4}$
0.25

- Instruct groups to exchange cards with another group. When you say, “go,” the groups must sort the cards from least to greatest using the fractions. Then they must put the equivalent decimal card under each fraction. The first group to correctly complete the task is the winner.

## Suggested Fractions and Equivalent Decimals

Fractions	Decimals
$\frac{2}{2}$	1.0
$\frac{1}{2}$	0.50
$\frac{1}{4}$	0.25
$\frac{3}{4}$	0.75
$\frac{1}{5}$	0.20
$\frac{2}{5}$	0.40
$\frac{3}{5}$	0.60
$\frac{4}{5}$	0.80
$\frac{1}{8}$	0.125
$\frac{3}{8}$	0.375
$\frac{5}{8}$	0.625
$\frac{7}{8}$	0.875
$\frac{1}{10}$	0.10
$\frac{3}{10}$	0.30
$\frac{7}{10}$	0.70
$\frac{9}{10}$	0.09

## Fractions and Decimals...Out to Dry

---

**Format:** Small groups

**SOL Objectives:**

- 5.2 The student will
- b) order a given set of fractions and decimals from least to greatest. Fractions will include like and unlike denominators limited to 12 or less, and mixed numbers.

**Vocabulary:** *least, greatest, order, fractions, decimals, mixed numbers*

**Materials:** Yarn, clothesline; clothes pins; number cards; recording sheets; pencils; calculator (optional)

**Time Required:** 20 to 30 minutes

**Directions:**

1. Create five groups (decks) of number cards, each including fractions, decimals, and mixed numbers.
2. Place each deck of cards at a learning station in the classroom.
3. Have students work in small groups to order the number cards from least to greatest and place them on the clothesline. Students should record their results on the handout provided.
4. Check for accuracy and replace the decks. Then have the students rotate to the next station, until all groups have completed all five decks.

Sample “deck” combination:

0.625,  $\frac{3}{4}$ ,  $1\frac{1}{5}$ , 0.15,  $\frac{1}{2}$

# Fractions and Decimals...Out to Dry

Name \_\_\_\_\_

Date \_\_\_\_\_

DECK A

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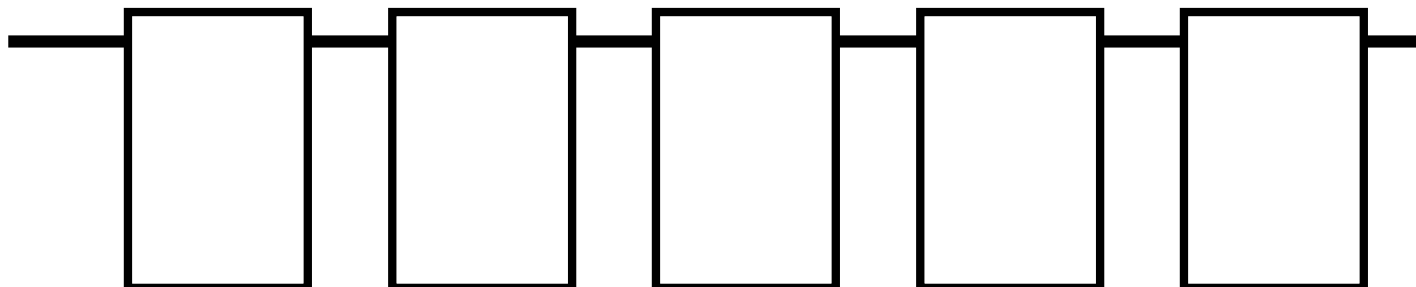
DECK B

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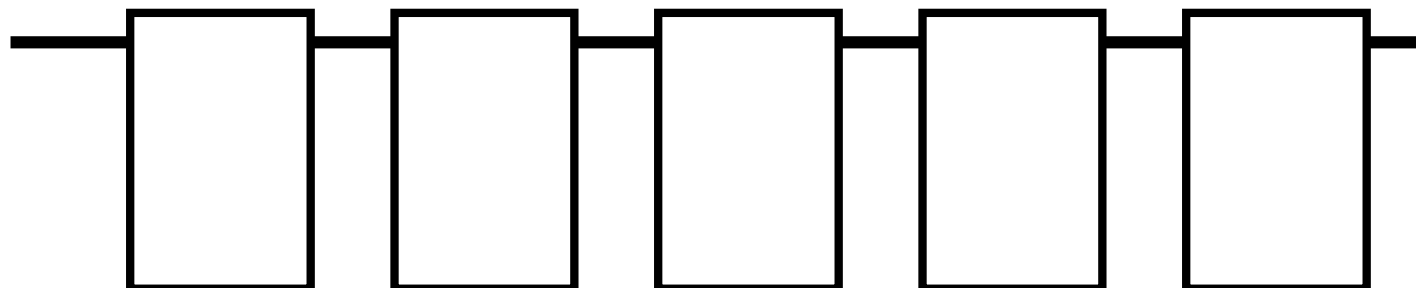
DECK C

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DECK D



DECK E



# Decimal War

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**Format:** Partners

**SOL Objectives:**

- 5.1 The student will
- a) read, write, and identify the place values of decimals through thousandths

**Related SOL:** 5.1c

**Vocabulary:** *tenths, hundredths, thousandths, compare, greater than, less than, equal to*

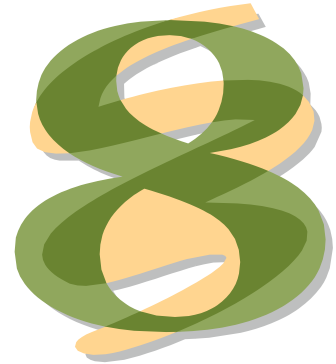
**Materials:** Game board; number cards (four sets); game pieces; pen/marker; die or spinner

**Time Required:** 20 to 30 minutes

**Directions:**





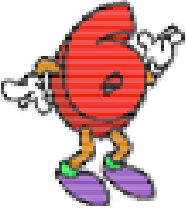

1. Explain to students that the object of the “Decimal War” game is to create a decimal number larger than your opponent’s.
2. Using the number cards provided, each player will draw a card. The player that draws the larger number will go first. (Players should put their cards back in the deck and shuffle the number cards before play begins.)
3. Player One draws a card from the top of the deck, shows the card to Player Two, and records the number in one of the decimal place columns on the recording sheet. (The player should *not* allow the opponent to see which decimal place was chosen.) Once the player decides on a decimal place, the number cannot be moved.
4. Player Two then draws a card, shows it to Player One, and records the number in a decimal place column on the recording sheet. (Again, the opponent should not be allowed to see which decimal place was chosen.) Once the player decides on a decimal place, the number cannot be moved.
5. Repeat steps 3 and 4 until the row on the recording sheet is filled and a number has been created.
6. Players compare numbers, and the one with the larger number rolls the die (or spins the spinner) and moves his or her game piece on the game board.
7. Players move to the next row on the recording sheet and repeat steps 3 through 6 until one player crosses the finish line, winning the game.

## Number Cards



## Decimal Place Value Chart

ONES	TENTHS	HUNDREDTHS	THOUSANDTHS

START		Go Back 1 Space		
				Go Forward 2 Spaces
Move Forward 2 Spaces				
		FINISH		
	<h1>Decimal War</h1>			
				
Lose a Turn				Go Back 3 Spaces

## Memory Place Value: Decimal Match

---

**Format:** Small groups, partners

**SOL Objectives:**

- 5.1 The student will
- a) read, write, and identify the place values of decimals through thousandths; and
  - b) round decimal numbers to the nearest tenth or hundredth.

**Vocabulary:** *tenths, hundredths, thousandths, round*

**Materials:** Memory game cards; die; recording sheet

**Time Required:** 15 to 20 minutes

**Directions:**

1. Place all of the memory cards facedown on a playing surface.
2. Each student will roll the die once. The student with the highest roll will go first.
3. The first player will turn over two cards in an attempt to find a match.
4. If the player has a match, he or she will record the match on the recording sheet, then play passes to the next student.
5. If the player does not have a match, play passes to the next student who will try to find a match.
6. The game is over once all of the cards have been matched. The player with the most decimal matches wins the game.

**Variations:**

- Ask students to order the decimals on their recording sheets from least to greatest.
- Have students round the decimals to the nearest place. (Underline one digit on the cards prior to students playing the game.)

**Memory Cards**

<b>3.817</b>	Three and eight hundred seventeen thousandths
<b>0.092</b>	Ninety-two thousandths
<b>4.201</b>	Four and two hundred one thousandths
<b>0.386</b>	Three hundred eighty-six thousandths

<b>0.374</b>	<b>Three hundred seventy-four thousandths</b>
<b>0.306</b>	<b>Three hundred six thousandths</b>
<b>8.92</b>	<b>Eight and ninety-two hundredths</b>
<b>1.503</b>	<b>One and five hundred three thousandths</b>

<b>0.738</b>	Seven hundred thirty-eight thousandths
<b>0.902</b>	Nine hundred two thousandths
<b>0.064</b>	Sixty-four thousandths
<b>0.433</b>	Four hundred thirty-three thousandths

<b>0.203</b>	Two hundred three thousandths
<b>0.418</b>	Four hundred eighteen thousandths
<b>0.359</b>	Three hundred fifty-nine thousandths
<b>0.794</b>	Seven hundred ninety-four thousandths

<b>0.14</b>	<b>Fourteen hundredths</b>
<b>0.85</b>	<b>Eighty-five hundredths</b>
<b>0.725</b>	<b>Seven hundred twenty-five thousandths</b>
<b>0.87</b>	<b>Eighty-seven hundredths</b>

Name: \_\_\_\_\_

### Memory Place Value Game Recording Sheet

<b>Standard Form</b>	<b>Word Form</b>	<b>Rounded Decimal</b>

## Model Match

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**Format:** Individual, partners, or small groups

**SOL Objectives:**

- 5.1 The student will
- a) read, write, and identify the place values of decimals through thousandths

**Related SOL:** 4.4

**Vocabulary:** *tenths, hundredths, word form, model*

**Materials:** Recording sheets, copy of model cards, and decimal cards

**Time Required:** 20 minutes

**Directions:**

1. Each individual or group should receive a set of model cards, written-form cards, and standard-form cards. (It is helpful if you pre-cut and prepare cards for students.)
2. Students may work individually or in groups to match the written form of a decimal to the standard form and the model card of each decimal.
3. Once students have matched the three cards for each decimal, they should record their matches on the recording sheet provided.
4. You can use the sample decimal recording sheet to demonstrate how you would like students to record their work. For the picture column, have students draw a model of the decimal like the one found on the matching model card, or use base-10 blocks.

**Variations:**

- Have students distribute the cards among the members of their group and then play "Go Fish" to find the matches of the three forms of the decimal.

Name \_\_\_\_\_

**DECIMALS SAMPLE RECORDING SHEET**

<b>WORD FORM</b>	<b>STANDARD FORM</b>	<b>PICTURE</b>
sixteen hundredths		
	<b>0.06</b>	
	<b>0.25</b>	
Thirty-four hundredths		

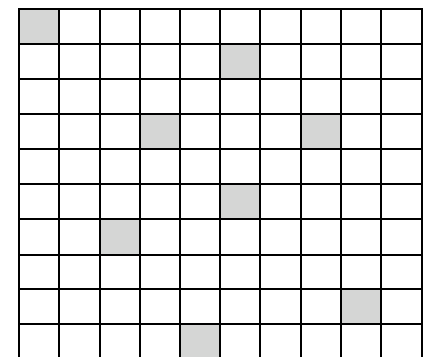
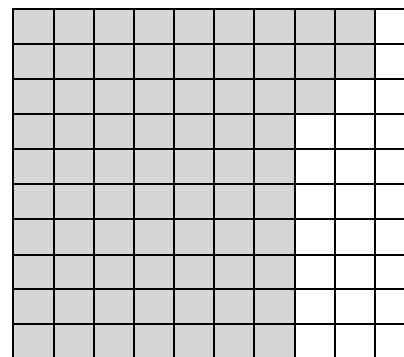
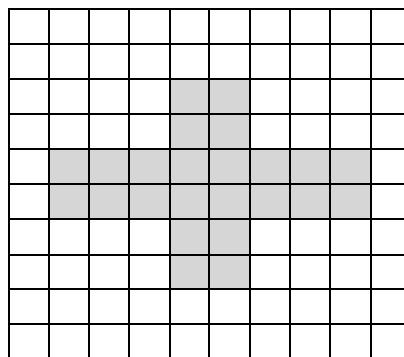
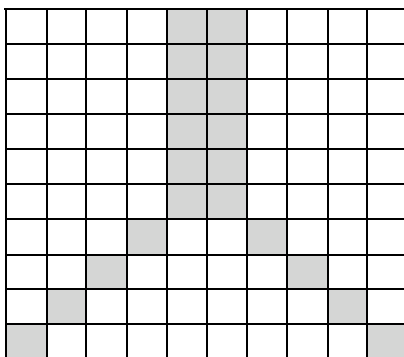
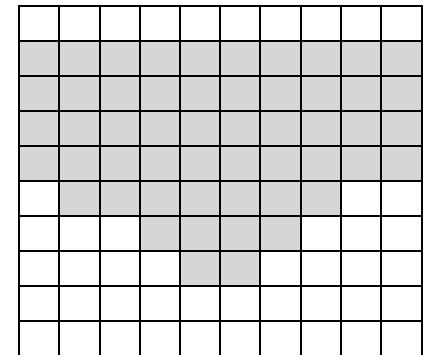
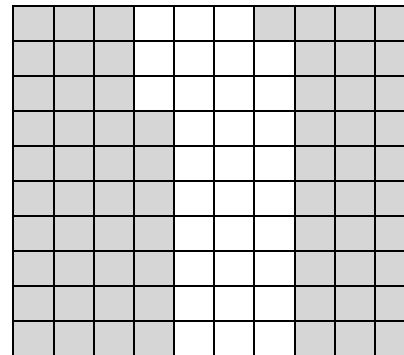
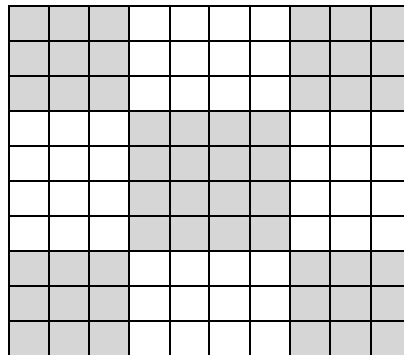
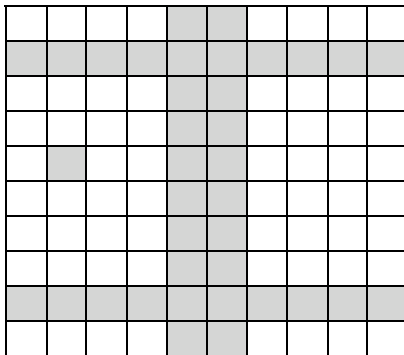
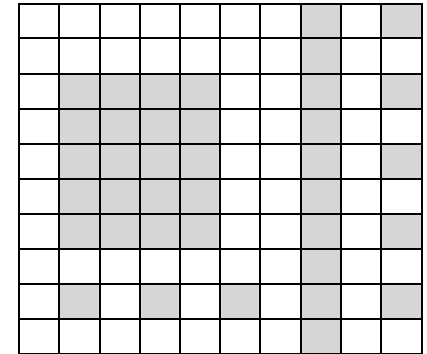
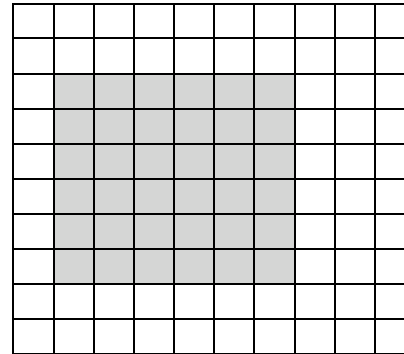
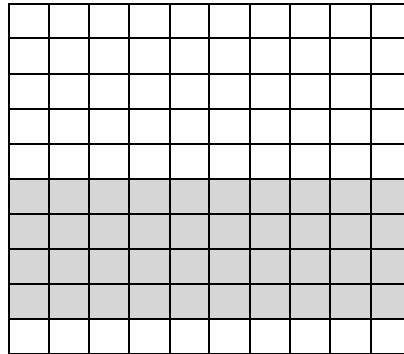
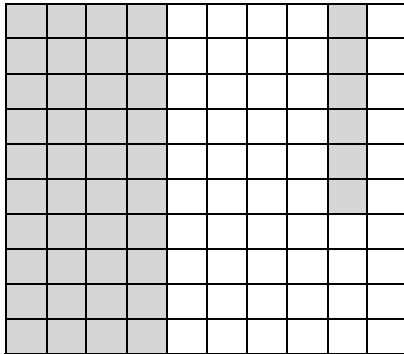
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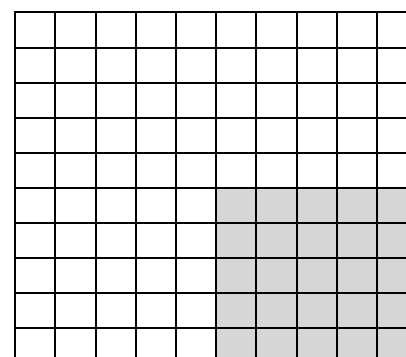
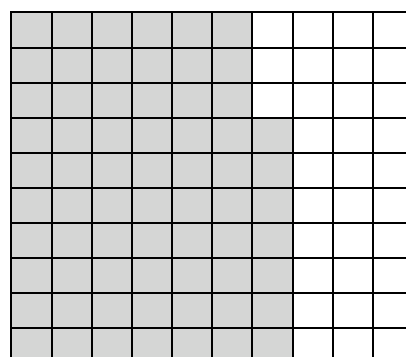
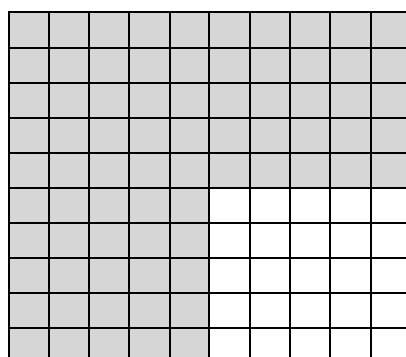
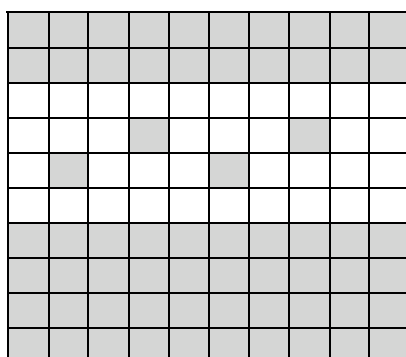
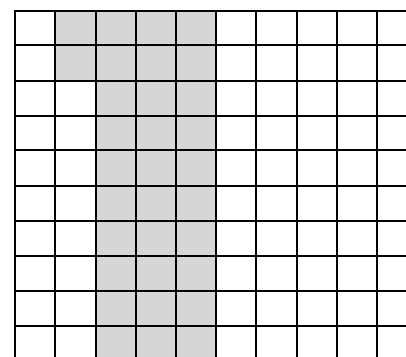
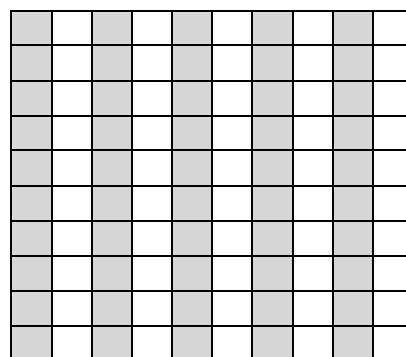
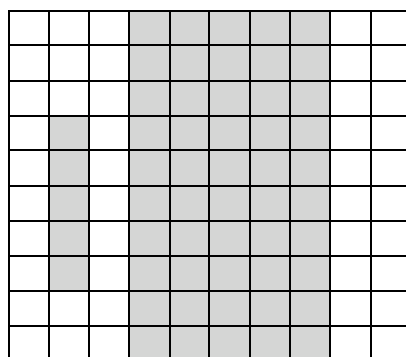
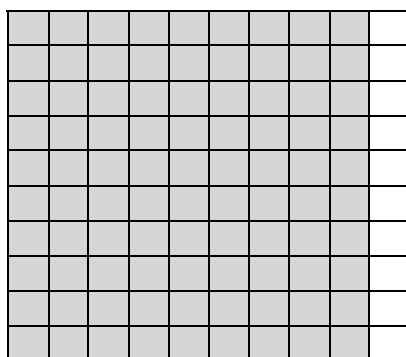
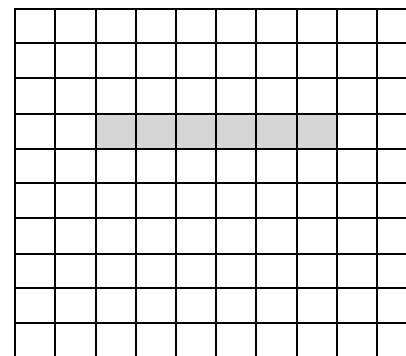
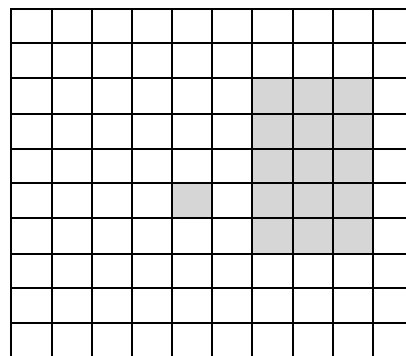
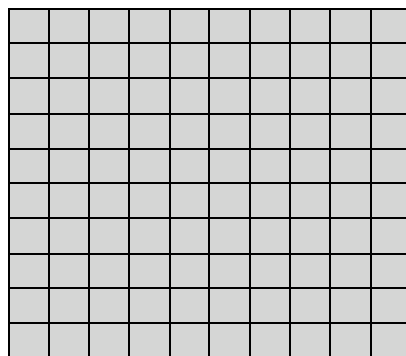
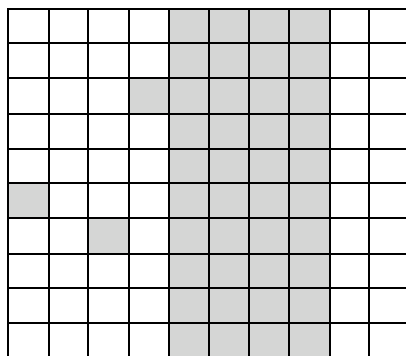
**DECIMALS RECORDING SHEET**

<b>WORD FORM</b>	<b>STANDARD FORM</b>	<b>PICTURE</b>

# Model Cards

Fifth-Grade Module





## Standard-Form Cards

<b>0.56</b>	<b>0.68</b>	<b>0.52</b>	<b>0.53</b>
<b>0.4</b>	<b>0.06</b>	<b>0.43</b>	<b>0.96</b>
<b>0.34</b>	<b>0.64</b>	<b>1</b>	<b>0.16</b>
<b>0.2</b>	<b>0.08</b>	<b>0.32</b>	<b>0.75</b>
<b>0.24</b>	<b>0.55</b>	<b>0.67</b>	<b>0.25</b>
<b>0.75</b>	<b>0.5</b>	<b>0.36</b>	<b>0.37</b>

**Written-Form Cards**

fifty-six hundredths	sixty-eight hundredths	fifty-two hundredths	fifty-three hundredths
four tenths	six hundredths	forty-three hundredths	ninety-six hundredths
thirty-four hundredths	sixty-four hundredths	one whole	sixteen hundredths
two tenths	eight hundredths	thirty-two hundredths	seventy-five hundredths
twenty-four hundredths	fifty-five hundredths	sixty-seven hundredths	twenty-five hundredths
seventy-five hundredths	five tenths	thirty-six hundredths	thirty-seven hundredths

# My Numbers

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**Format:** Whole class, small groups

**SOL Objectives:**

- 5.1 The student will
- read, write, and identify the place values of decimals through thousandths;
  - round decimal numbers to the nearest tenth or hundredth; and
  - compare the values of two decimals through thousandths, using the symbols  $>$ ,  $<$ , or  $=$ .
- 5.2 The student will
- recognize and name commonly used fractions (halves, fourths, fifths, eighths, and tenths) in their equivalent decimal form and vice versa; and
  - order a given set of fractions and decimals from least to greatest. Fractions will include like and unlike denominators limited to 12 or less, and mixed numbers.

**Related SOL:** 4.2, 4.4, 3.6, 3.7

**Vocabulary:** *whole numbers, decimals, fractions, mixed numbers, relevant numbers*

**Materials:** Transparencies and overhead projector, or whiteboard; paper and pencil

**Time Required:** 30 minutes

**Directions:**

- Using the overhead transparency, or the whiteboard, write 10 or more numbers related to your personal life.
- Provide a clue for each number, and have students try to match the clue with each number (e.g., “In which year was I born? How many years have I been teaching? How many brothers and sisters do I have? How far do I live from school?”).
- Discuss student responses and how they came to those conclusions.
- Have students create their own list of personal numbers (8 to 12 numbers) and their own matching clues (see examples below).
- Students will work in pairs or small groups to exchange lists of numbers and clues.
- Bring students back together as a whole class to discuss how they matched clues to the numbers. What were their strategies for choosing numbers?

Examples for Students:

Number List: 1998, 10, 2, 5, .75, 1,210,  $6\frac{2}{3}$ , 62

Clues:

- The year I was born (1998)
- My age (10)
- Number of siblings (2)
- My grade (5)
- Amount of change in my pocket (.75)
- Number of pennies in my piggy bank (1,210)
- Number of miles from my home to school ( $6\frac{2}{3}$ )
- Age of my grandpa (62)

# Roll 'em

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**Format:** Partners

**SOL Objectives:**

- 5.1 The student will  
b) round decimal numbers to the nearest tenth or hundredth

**Related SOL:** 5.1b and 4.4b

**Vocabulary:** *estimate, round, decimals, hundredths, tenths*

**Materials:** Three number cubes per pair, pencil and paper

**Time Required:** 15 to 20 minutes

**Directions:**

1. Player One rolls the three number cubes and puts the three numbers together to form a decimal, then rounds the decimal to the nearest hundredth.
2. Player Two checks the number to make sure it is rounded to the nearest hundredth. If it is correct, Player One gets a point.
3. Player Two rolls the number cubes, makes a decimal, and rounds it to the nearest hundredth. Player One checks the number and, if correct, Player Two scores one point.
4. If a player rounds the number incorrectly, that player must subtract two points from his or her score.
5. Play continues until a score of 10 is reached or you call time.

*Note:* This is a quick way to determine if a student knows how to round decimals.

## Decimal Board Activities

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**Format:** Small groups, whole class

**SOL Objectives:**

- 5.1 The student will
  - c) compare the values of two decimals through thousandths, using the symbols  $>$ ,  $<$ , or  $=$ .
- 5.2 The student will
  - a) recognize and name commonly used fractions (halves, fourths, fifths, eighths, and tenths) in their equivalent decimal form and vice versa

**Related SOL:** 4.4a,c

**Vocabulary:** *tenths, hundredths, thousandths, greater than, less than, equal to, compare*

**Materials:** Decimal board, chips or crayons, paper and pencil

**Time Required:** 15 to 20 minutes

**Directions:**

1. Provide each student with a decimal board and chips or crayons to cover answers on their decimal board.
2. Using the provided question lists, ask students to determine the answer, and then cover the corresponding decimal on their decimal board.
3. Play continues until students discover a hidden picture after covering the appropriate decimal numbers. Check for accuracy.

*Note:* Four sets of questions are included for use with the decimal boards. However, there are many other sets of questions that you may come up with for the decimal boards.

NAME \_\_\_\_\_

**DECIMAL BOARD**

0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.2
0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.3
0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.4
0.41	0.42	0.43	0.44	0.45	0.46	0.47	0.48	0.49	0.5
0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.58	0.59	0.6
0.61	0.62	0.63	0.64	0.65	0.66	0.67	0.68	0.69	0.7
0.71	0.72	0.73	0.74	0.75	0.76	0.77	0.78	0.79	0.8
0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.9
0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1.0

## Game Questions for Decimal Board 1

1. What is two hundredths less than thirty-five hundredths? **0.33**
2. What is four hundredths less than forty-seven hundredths? **0.43**
3. What is three hundredths less than six tenths? **0.57**
4. What is two hundredths less than two tenths? **0.18**
5. What is four hundredths less than fifty-eight hundredths? **0.54**
6. What is two hundredths less than forty-nine hundredths? **0.47**
7. What is two hundredths less than twenty-seven hundredths? **0.25**
8. What is one hundredth less than fifteen hundredths? **0.14**
9. What is three hundredths less than twenty-five hundredths? **0.22**
10. What is one hundredth less than fifty-four hundredths? **0.53**
11. What is two hundredths less than fifty-eight hundredths? **0.56**
12. What is seven hundredths less than two tenths? **0.13**
13. What is three hundredths less than nineteen hundredths? **0.16**
14. What is five hundredths less than six tenths? **0.55**
15. What is two hundredths less than thirty-nine hundredths? **0.37**
16. What is one hundredth less than twenty-nine hundredths? **0.28**
17. What is three hundredths less than two tenths? **0.17**
18. What is four hundredths less than sixteen hundredths? **0.12**

## Decimal Board 1 Key

0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.2
0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.3
0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.4
0.41	0.42	0.43	0.44	0.45	0.46	0.47	0.48	0.49	0.5
0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.58	0.59	0.6
0.61	0.62	0.63	0.64	0.65	0.66	0.67	0.68	0.69	0.7
0.71	0.72	0.73	0.74	0.75	0.76	0.77	0.78	0.79	0.8
0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.9
0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1.0

## Game Questions for Decimal Board 2

Use your decimal board to help you extend or complete the pattern. Place a chip, or color, the next decimal number in the pattern.

1. 0.05, 0.1, \_\_\_\_\_
2. 0.27, 0.36, 0.45, \_\_\_\_\_
3. 0.1, 0.08, 0.06, \_\_\_\_\_
4. 0.5, 0.45, 0.4, \_\_\_\_\_
5. 0.2, 0.4, \_\_\_\_\_
6. 0.45, 0.35, \_\_\_\_\_
7. 0.14, 0.16, 0.18, 0.2, \_\_\_\_\_
8. 0.3, 0.33, 0.35, 0.38, 0.4, 0.43, \_\_\_\_\_
9. 0.12, 0.16, 0.2, 0.24, \_\_\_\_\_
10. 0.59, 0.58, 0.57, \_\_\_\_\_
11. 0.01, 0.04, 0.07, 0.1, \_\_\_\_\_
12. 0.22, 0.29, 0.36, \_\_\_\_\_
13. 0.47, 0.37, 0.27, \_\_\_\_\_
14. 0.02, 0.12, 0.22, \_\_\_\_\_
15. 0.09, 0.11, 0.18, 0.2, 0.27, 0.29, 0.36, \_\_\_\_\_
16. 0.5, 0.49, 0.48, \_\_\_\_\_

## Decimal Board 2 Key

0.01	0.02	0.03	<u>0.04</u>	0.05	<u>0.06</u>	0.07	0.08	0.09	0.1
0.11	0.12	<u>0.13</u>	0.14	<u>0.15</u>	0.16	<u>0.17</u>	0.18	0.19	0.2
0.21	<u>0.22</u>	0.23	0.24	<u>0.25</u>	0.26	0.27	<u>0.28</u>	0.29	0.3
0.31	<u>0.32</u>	0.33	0.34	<u>0.35</u>	0.36	0.37	<u>0.38</u>	0.39	0.4
0.41	0.42	<u>0.43</u>	0.44	<u>0.45</u>	0.46	<u>0.47</u>	0.48	0.49	0.5
0.51	0.52	0.53	<u>0.54</u>	0.55	<u>0.56</u>	0.57	0.58	0.59	0.6
0.61	0.62	0.63	0.64	0.65	0.66	0.67	0.68	0.69	0.7
0.71	0.72	0.73	0.74	0.75	0.76	0.77	0.78	0.79	0.8
0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.9
0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1.0

## Game Questions for Decimal Board 3

1. Which is less **0.01** or 0.02?
2. Which is more 0.09 or **0.1**?
3. Which is more 0.11 or **0.12**?
4. Which is more 0.01 or **0.09**?
5. Which is more **0.23** or 0.22?
6. Which is less **0.18** or 0.81?
7. Which is less **0.34** or 0.43?
8. Which is less **0.27** or 0.28?
9. Which is more **0.45** or 0.35?
10. Which is less **0.36** or 0.62?
11. Which is less **0.54** or 0.60?
12. Which is more **0.56** or 0.46?
13. Which is less **0.63** or 0.65?
14. Which is more **0.67** or 0.66?
15. Which is more 0.37 or **0.72**?
16. Which is more 0.77 or **0.78**?
17. Which is less 0.89 or **0.79**?
18. Which is less 0.91 or **0.81**?
19. Which is less **0.91** or 1.0?
20. Which is less **1.0** or 2.0?

### Decimal Board 3 Key

0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.2
0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.3
0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.4
0.41	0.42	0.43	0.44	0.45	0.46	0.47	0.48	0.49	0.5
0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.58	0.59	0.6
0.61	0.62	0.63	0.64	0.65	0.66	0.67	0.68	0.69	0.7
0.71	0.72	0.73	0.74	0.75	0.76	0.77	0.78	0.79	0.8
0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.9
0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1.0

## Questions for Decimal Board 4

Round each problem to the nearest hundredth:

1. 0.234 (0.23)
2. 0.274 (0.27)
3. 0.453 (0.45)
4. 0.571 (0.57)
5. 0.633 (0.63)
6. 0.750 (0.75)
7. 0.154 (0.15)
8. 0.235 (0.24)
9. 0.430 (0.43)
10. 0.438 (0.44)
11. 0.247 (0.25)
12. 0.256 (0.26)
13. 0.669 (0.67)
14. 0.553 (0.55)
15. 0.345 (0.35)
16. 0.635 (0.64)
17. 0.468 (0.47)
18. 0.333 (0.33)
19. 0.457 (0.46)
20. 0.661 (0.66)
21. 0.652 (0.65)

## Decimal Board 4 Key

0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
0.11	0.12	0.13	0.14	<u>0.15</u>	0.16	0.17	0.18	0.19	0.2
0.21	0.22	<u>0.23</u>	<u>0.24</u>	<u>0.25</u>	<u>0.26</u>	<u>0.27</u>	0.28	0.29	0.3
0.31	0.32	<u>0.33</u>	0.34	<u>0.35</u>	0.36	0.37	0.38	0.39	0.4
0.41	0.42	<u>0.43</u>	<u>0.44</u>	<u>0.45</u>	<u>0.46</u>	<u>0.47</u>	0.48	0.49	0.5
0.51	0.52	0.53	0.54	<u>0.55</u>	0.56	<u>0.57</u>	0.58	0.59	0.6
0.61	0.62	<u>0.63</u>	<u>0.64</u>	<u>0.65</u>	<u>0.66</u>	<u>0.67</u>	0.68	0.69	0.7
0.71	0.72	0.73	0.74	<u>0.75</u>	0.76	0.77	0.78	0.79	0.8
0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.9
0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1.0

# What's My Number?

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**Format:** Whole class, small groups

**SOL Objectives:**

- 5.1 The student will
  - a) read, write, and identify the place values of decimals through thousandths;
  - b) round decimal numbers to the nearest tenth or hundredth; and
  - c) compare the values of two decimals through thousandths, using the symbols  $>$ ,  $<$ , or  $=$ .
- 5.2 The student will
  - a) recognize and name commonly used fractions (halves, fourths, fifths, eighths, and tenths) in their equivalent decimal form and vice versa; and
  - b) order a given set of fractions and decimals from least to greatest. Fractions will include like and unlike denominators limited to 12 or less, and mixed numbers.

**Related SOL:** 4.4

*(Note: This activity can be adapted for whole number concepts in grades 1-3.)*

**Vocabulary:** tenths, hundredths, thousandths, fractions, decimals, rounding, greater than, less than, equivalent

**Materials:** Set of “secret” decimal numbers on index cards (to be created by instructor, with decimals ranging from 0.01 to 10.0)

**Time Required:** 10 to 15 minutes

**Directions:**

1. Model an example of the activity by asking a student to choose a “secret” decimal card. *(For demonstration purposes, share the secret number with the participating student—0.75.)*
2. Ask the student “yes” or “no” questions to obtain clues about the secret decimal number. For example: “Is this number decimal less than one? Do the digits in this decimal total 12? Does this number have a five in the hundredths place? Is this number equivalent to  $\frac{3}{4}$ ?”
3. Group or pair students and give *one* student in the group an index card with a secret decimal number.
4. Other students in the group will try to guess the secret number. If the guess is incorrect, the student with the card will tell the others whether the secret number is greater or less than the number guessed. Students will continue to ask “yes” or “no” questions until they correctly guess the secret decimal number.

**Variations:**

- Use a fraction or decimal as the secret number.

## Who Is Larger?

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**Format:** Small groups, partners

**SOL Objectives:**

- 5.1 The student will  
c) compare the values of two decimals through thousandths, using the symbols  $>$ ,  $<$ , or  $=$

**Related SOL:** 4.4b, 3.3

**Vocabulary:** greater, least, equal, decimal, tenth, hundredths, thousandths

**Materials:** Number cards

**Time Required:** 20 minutes

**Directions:**

1. This game is played like the card game “War.”
2. Deal all of the cards among the players (see *possible card numbers below*). Each player turns one card over, and whoever has the largest number wins the cards. (The game also can be played based on who has the smallest number.)
3. If a tie occurs, each player turns over another card, and the largest card wins *all* of the overturned cards.
4. Continue to play until one player wins all of the cards, or the time limit for the game is reached.

**Possible Card Numbers:**

7.246	7.43	7.7
6.676	6.67	6.6
5.333	5.33	5.3
4.878	4.87	4.8
3.557	3.56	3.6
2.090	2.09	2.9
1.111	1.11	1.1
9.947	9.94	9.9
8.632	8.63	8.6
0.414	0.41	0.4
10.007	10.07	10.0